

Application No. 10/606,571
Amendment Dated July 12, 2007
Reply to Office Action Dated July 31, 2006
Submitted After Notice of Appeal Dated February 5, 2007

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1-10. (cancelled)

11. (currently amended) A system for positioning and tracing of a guiding channel during surgery on a patient, said system comprising:

a first moving arm pivotally fixed to a first fixed plane;

a second moving arm pivotally fixed to a second fixed plane;

a pair of guiding channel fasteners each coupled to said first and second moving arms and configured to attach to a guiding channel at a corresponding first and second reference locations;

an encoder unit coupled to said moving arm, said encoder unit configured to provide signals so as to allow an estimate of the coordinates of said reference locations;

an imaging unit configured to acquire images of the interior portion of said patient's body; and

a processor coupled to said encoder unit and said imaging unit configured to calculate a trajectory of a line extending from said surgical tool towards the interior portion of said patient based on data acquired from said encoder unit and to display said

calculated trajectory as a superimposed image over to be displayed on said acquired
images of the interior portion of said patient's body.

12. (cancelled)

13. (cancelled)

14. (previously presented) The system in accordance with claim 11 further comprising a display means configured to display the trajectory of said guiding channel within the patient's body.

15. (original) The system in accordance with claim 14, wherein said moving arms are each attached to a pantoguide.

16. (original) The system in accordance with claim 15, wherein said encoder unit further comprises angle encoders for measuring deformation and rotation angle of said pantoguide.

17. (original) The system in accordance with claim 16 further comprising a motor mechanism coupled to said moving arms so as to remotely control the movement of said moving arms.

18. (currently amended) A system for positioning and tracing of a guiding channel during surgery on a patient, said system comprising:

a first pantoguide unit having four moving arms pivoted together by pivot points, wherein one of said pivot points is fixedly attached to a first surface, and wherein one of said arms is extended to define a first moving arm;

a second pantoguide unit having four moving arms pivoted together by pivot points, wherein one of said pivot points is fixedly attached to a second surface, and wherein one of said arms is extended to define a second moving arm, said first and second surface are fixedly apart from each other;

a first fastening unit coupled to said first moving arm and a second fastening unit coupled to said second arm, wherein said fastening units are configured to attach to a guiding channel at a first and second reference locations; and

an angle encoder coupled to each of said first and second pantoguides configured to provide information corresponding to deformation and rotation angles of said pantoguides as said first and second reference locations move in a surgery space;

an imaging unit configured to acquire images of the interior portion of said patient's body; and

a processor coupled to said encoder unit and said imaging unit configured to calculate a trajectory of a line extending from said surgical tool towards the interior portion of said patient based on data acquired from said encoder unit and to display said calculated trajectory as a superimposed image over ~~to be displayed on~~ said acquired images of the interior portion of said patient's body.

19. (original) The system according to claim 18 wherein said first and second surfaces are disposed in parallel to each other.

20. (cancelled)

21. (previously presented) The system in accordance with claim 19, wherein said processor is further configured to calculate the coordinates of said first and second reference locations based on said angle information received from said angle encoders.

22. (previously presented) The system in accordance with claim 21, wherein said processor is further configured to calculate a trajectory of a line extending from said first and second reference locations based on said calculated coordinates.

23. (cancelled)

24. (previously presented) The system in accordance with claim 22, wherein said processor is further configured to superimpose said calculated trajectory on images acquired by said image acquisition system so as to allow visualization of said line within the patient's body.

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25. (previously presented) The system in accordance with claim 22, wherein said processor is further configured to calculate the projection of images from said surgery space to an image plane of said acquired images.

26. (original) The system in accordance with claim 24 further comprising a motor mechanism so as to remotely control the movement of said moving arms.